IN THE CLAIMS:

The following is a current listing of claims and will replace all prior versions and listings of claims in the application. Please amend the claims as follows:

1.   (Currently Amended) An apparatus, comprising:

a switch having a plurality of ports, wherein <u>for a unicast packet to be routed:</u>

the switch is configured to receive [[a]] <u>the unicast</u> packet on a first of the plurality of ports, the <u>unicast</u> packet including header data including path routing information usable to route the <u>unicast</u> packet from an origin node to an endpoint node within a network, and wherein the path routing information includes a first turn value and a bit count value;

wherein the switch is configured, based on an identifier for the first port, the first turn value, and the number of the plurality of ports, to transmit the <u>unicast</u> packet on a second of the plurality of ports, wherein the switch is configured to select the first turn value using the bit count value;

<u>and wherein for a multicast packet to be routed:</u>

<u>the switch is configured to receive the multicast packet and transmit one or more copies of the multicast packet, respectively, on one or more of the plurality of ports based on multicast group information contained in the multicast packet and based on multicast routing information maintained by the switch, wherein the multicast routing information includes a plurality of entries corresponding to a plurality of multicast groups.</u>

~~wherein the path routing information is translatable by the endpoint node for the packet to determine reverse path routing information that is usable to route one or more packets back to the origin node from the endpoint node[[.]]~~

2.	(Currently Amended) A system, comprising:

a switch having a plurality of ports including a first port and a second port, wherein the switch is configured to receive a <u>unicast</u> packet on the first port, wherein the <u>unicast</u> packet includes header data comprising path routing information that is usable to route the <u>unicast</u> packet from an origin node to an endpoint node within a network, and wherein the path routing information includes a turn pool comprising a plurality of turn values;

wherein the switch is configured to select, using a received bit count value, one of the plurality of turn values, and wherein the switch is further configured, based on the selected turn value, an identifier for the first port, and the number of the plurality of ports, to select the second port on which to transmit the <u>unicast</u> packet;

<u>wherein the switch is configured to receive a multicast packet on the first port and select one or more ports other than the first port to route the multicast packet, wherein selecting the one or more ports is based on multicast group information contained in the multicast packet and based on multicast routing information maintained by the switch, wherein the multicast routing information includes a plurality of entries corresponding to a plurality of multicast groups.</u>

~~wherein the path routing information is translatable by the endpoint node for the packet to calculate reverse path routing information that is usable to route one or more packets back to the origin node from the endpoint node~~[[.]]

3.	(Canceled)

4.	(Previously Presented) The system of claim 2, wherein the header data is comprised of a credit length, the bit count value, an operation, a Path Identifier (PID) index, a Maximum Transmission Unit (MTU) and an Extended Unique Identifier (EUI).

5-12.	(Canceled)

13.	(Previously Presented) The system of claim 2, wherein the header data further comprises the received bit count value.

14.	(Canceled)

15.   (Currently Amended) A switch, comprising:

first means for receiving a <u>unicast</u> packet on a first port of a plurality of ports of the switch, the <u>unicast</u> packet comprising path routing information usable to route the <u>unicast</u> packet from an origin node to an endpoint node, and wherein the path routing information comprises a turn pool comprising a plurality of turn values;

second means for selecting one of the plurality of turn values in the turn pool, wherein said selecting uses a received bit count value;

third means for using the selected turn value, an identifier of the first port, and the number of the plurality of ports to select a second port of the plurality of ports on which to transmit the <u>unicast</u> packet; ~~and~~

fourth means for transmitting the <u>unicast</u> packet on the second port; <u>and</u>

<u>fifth means for receiving a multicast packet on the first port and transmitting the multicast packet over one or more of the plurality of ports, wherein said transmitting the multicast packet is based on multicast information contained in the multicast packet and is based on multicast routing information accessible to the switch, wherein the multicast routing information includes multicast group information.</u>

~~wherein the path routing information is translatable by the endpoint node for the packet to determine reverse path routing information that is usable to route one or more packets back to the origin node from the endpoint node~~[[.]]

16.   (Canceled)

17.   (Currently Amended) The switch of claim 15, further comprising:

~~fifth~~ <u>sixth</u> means for modifying the path routing information prior to transmitting the packet, wherein the path routing information comprises the bit count value.

18.   (Currently Amended) A method, comprising:

receiving, at a switch within a network, an encapsulated packet, wherein the encapsulated packet includes path routing information that includes a plurality of turn values, and wherein the encapsulated packet is received at first of a plurality of ports of the switch;

the switch selecting one of the plurality of turn values using a bit count value included in the path routing information;

the switch determining a second port of the plurality of ports using the selected turn value, an identifier for the first port, and the number of the plurality of ports; and

the switch transmitting the encapsulated packet via the second port;

wherein the switch is configured to receive a multicast packet and transmit one or more copies of the multicast packet, respectively, on one or more of the plurality of ports based on multicast group information contained in the multicast packet and based on multicast routing information that the switch is configured to maintain, wherein the multicast routing information includes a plurality of entries usable to store information corresponding to a plurality of multicast groups.

~~wherein the path routing information is usable by a destination node for the packet to determine a backward path along which one or more packets may be transmitted back to an origin node for the encapsulated packet[[.]]~~

19.   (Previously Presented) The method of claim 18, further comprising modifying the bit count value prior to transmitting the encapsulated packet via the second port.

20.   (Currently Amended) A method of path routing an encapsulated packet from a source to a destination within a fabric having at least one switch, the method comprising:

receiving an encapsulated packet at a first of a plurality of ports of the at least one switch, wherein the encapsulated packet includes a header including a first turn value;

selecting the first turn value using a received bit count value;

determining a second of the plurality of ports using the first turn value, an identifier for the first port, and the number of the plurality of ports; and

transmitting the encapsulated packet from the at least one switch via the second port;

wherein the at least one switch is configured to distinguish between the received encapsulated packet and a multicast packet received by the at least one switch, and wherein the at least one switch is configured to transmit one or more copies of the received multicast packet, respectively, on one or more of the plurality of ports of the at least one switch based at least on multicast routing information that the at least one switch is configured to maintain, wherein the multicast routing information includes a plurality of entries usable to store information corresponding to a plurality of multicast groups.

~~wherein routing information within the transmitted encapsulated packet is translatable by the destination to determine reverse path routing information that is usable to route one or more packets back to the source from the destination~~[[.]]

21.   (Previously Presented) The method of claim 20, wherein the header further comprises the bit count value.

22.   (Currently Amended) The method of claim 20, further comprising modifying the header prior to transmitting the encapsulated packet via the second port.

23.   (Canceled)

24.   (Currently Amended) The method of claim 20, wherein the fabric comprises a plurality of switches, and the method further comprises repeating the receiving, the determining, and the transmitting at various ones of the plurality of switches with corresponding ones of a plurality of turn values until the <u>encapsulated</u> packet reaches the destination, wherein the plurality of turn values includes the first turn value, and wherein the plurality of turn values are located in the header.

25.   (Previously Presented) The method of claim 21, wherein the routing information in the transmitted encapsulated packet further comprises a turn pool including the plurality of turn values, and wherein the destination is configured to use the turn pool and the bit count value of the packet to create a second header and encapsulate the second header within a second packet to be routed from the destination to the source.

26.   (Canceled)

27.   (Previously Presented) The apparatus of claim 1, the path routing information including a plurality of turn values that includes the first turn value, wherein each of the plurality of turn values corresponds to a respective network device within a path for the packet, and wherein a given one of the respective network devices in the path that receives the packet on a corresponding input port is configured to use the bit count value to select one of the plurality of turn values as a current turn value, and wherein the given network device is further configured to transmit the packet on an output port of the given network device, wherein the output port is specified by the current turn value, the corresponding input port of the given network device, and the number of ports of the given network device.

28.   (Previously Presented) The method of claim 20, wherein the header includes a turn pool including a plurality of turn values that includes the first turn value.

29.   (Currently Amended) The apparatus of claim 1, wherein the <u>multicast</u> ~~path~~ routing information <u>includes one or more multicast distribution vectors</u> ~~is translatable by: setting the bit~~

~~count value to zero; and~~

> ~~inverting and bit reversing a turn pool including the first turn value~~.

30. (Currently Amended) The method of claim 18, wherein the <u>multicast packet includes</u> <u>header data that is different than the header data included in the unicast packet</u> ~~switch is coupled~~ ~~to the origin node~~.

31. (Currently Amended) The method of claim 18, wherein the switch is coupled to the destination ~~node~~.